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Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Currently Amended) A method for routing data frames, the method comprising:

providing a bridge device having a plurality of ports and a shared forwarding database, the plurality of ports comprising a local interface port for connecting the bridge to a plurality of end devices operating on different virtual local area networks (VLANs) and a plurality of remote interface ports for connecting to a connection-based network;

creating an entry in the shared forwarding database, the entry indexed exclusively by an address of a non-VLAN-aware network element connected to the connection-based network and the entry indicating that data addressed to the ~~address~~ non-VLAN-aware network element should be source routed;

receiving, at the ~~bridge device~~ local interface port from one of the end devices, a data frame addressed to the ~~address~~ non-VLAN-aware network element;

determining that the data frame requires source routing based on the entry in the shared forwarding database;

reading source routing data from the data frame, the source routing data independent of the address of the non-VLAN-aware network element;

identifying ~~a port~~ one of the remote interface ports associated with the one of the end devices, ~~from among the plurality of ports~~ [[,]] based at least in part on the source routing data; and,

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sending the data frame to the identified ~~port~~ <u>one of</u>
<u>the remote interface ports</u>.

2.   (Currently Amended) The method of claim 1 wherein the
       data frame comprises a VLAN tag <u>corresponding to the VLAN</u>
       <u>on which the one of the end devices operates</u> and reading
       the source routing data from the data frame comprises
       reading the VLAN tag.

3.   (Currently Amended) The method of claim 2 wherein each of
       the plurality of <u>remote interface</u> ports is associated
       with a port VLAN identifier.

4.   (Currently Amended) The method of claim 1 wherein the
       address comprises a MAC address of ~~a device~~ <u>the non-VLAN-</u>
       <u>aware network element</u> and determining that the data frame
       requires source routing comprises looking up the MAC
       address in the shared forwarding database.

5.   (Original) The method of claim 1 comprising applying one
       or more inbound rules to the data frame before
       determining that the data frame requires source routing.

6.   (Currently Amended) The method of claim 5 comprising
       applying one or more outbound rules to the data frame
       after identifying the ~~port, from among the plurality of~~
       ~~ports, based at least in part on the source routing data~~
       <u>one of the remote interface ports</u>.

7.   (Currently Amended) The method of claim 1 comprising
       applying one or more outbound rules to the data frame
       after identifying the ~~port, from among the plurality of~~

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~~ports, based at least in part on the source routing data~~ one of the remote interface ports.

8.   (Currently Amended) The method of claim 3 wherein reading the VLAN tag comprises reading a first VID specified in the VLAN tag and wherein identifying the ~~port, from among the plurality of ports, based at least in part on the source routing data~~ one of the remote interface ports comprises identifying the remote interface port associated with the port VLAN identifier equal to the first VID.

9.   (Currently Amended) The method of claim 8 comprising receiving a second data frame at the identified ~~port of the bridge device~~ one of the remote interface ports and tagging the second data frame with ~~a second VLAN tag, the second VLAN tag comprising a second VID equal to the port VLAN identifier associated with the identified port~~ the first VID.

10. (Currently Amended) The method of claim 3 wherein reading the VLAN tag comprises reading a first VID specified in the VLAN tag and wherein identifying the ~~port, from among the plurality of ports, based at least in part on the source routing data~~ one of the remote interface ports comprises identifying the remote interface port associated with the port VLAN identifier corresponding to the first VID according to a correspondence maintained in the bridge.

11. (Currently Amended) The method of claim 10 comprising receiving a second data frame at the identified ~~port of the bridge device~~ one of the remote interface ports and

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tagging the second data frame with ~~a second VLAN taG, the second VLAN tag comprising a second VID corresponding to the port VLAN identifier associated with the identified port according to the correspondence maintained in the bridge~~ the first VID.

12.   (Currently Amended) The method of claim 14 comprising:
        receiving, at the ~~bridge device~~ identified one of the remote interface ports, a third data frame from the ~~address~~ non-VLAN-aware network element;
        using the address of the non-VLAN-aware network element to look up the entry in the shared forwarding database
        determining that the shared forwarding database should not be dynamically updated in response to receiving the third data frame based on the entry in the shared forwarding database ~~indicating that data addressed to the address should be source routed~~.

13.   (Currently Amended) A bridge comprising:
        a plurality of bridge ports comprising a local interface port connected to a plurality of end devices operating on different virtual local area networks (VLANs) and a plurality of remote interface ports connected to a connection-based network, the connection-based network comprising a non-VLAN-aware network element;
        a shared forwarding database, the shared forwarding database indexed exclusively by a single address field and the shared forwarding database comprising a plurality of first records, each first record associating an address with one of the bridge ports, and at least one second record, the at least one second record associating

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a corresponding second address with information
indicating that data sent to the corresponding second
address requires source routing, the corresponding second
address being the address of the non-VLAN-aware network
element;

the bridge being configured to respond to receipt,
at the local interface port, of a data frame from one of
the end devices and addressed to the corresponding second
address by:

determining from the at least one second record that
the data frame requires source routing;

reading source routing information from the data
frame, the source routing information independent of the
corresponding second address; and [[,]]

identifying one of the remote interface ports
associated with the one of the end devices based at least
in part on the source routing information; and

forwarding the data frame to one of the bridge ports
based upon the source routing information the identified
one of the remote interface ports.

14.   (Currently Amended) The method of claim 1 comprising:

receiving, at the bridge device identified one of
the remote interface ports, a second data frame from a
second network element having a second address at a
second one of the plurality of ports; and

dynamically updating the shared forwarding database
in response to receiving the second data frame, wherein
dynamically updating the shared forwarding database
comprises:

using the second address to look up a second
entry in the shared forwarding database, the second
entry indexed by the second address;

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if the second entry is present in the shared
forwarding database, ensuring that the second entry
indicates that data addressed to the second address
should be routed to the ~~second one of the plurality
of ports~~ identified one of the remote interface
ports; and

if the second entry is not present in the
shared forwarding database, creating the second
entry and ensuring that the second entry indicates
that data addressed to the second address should be
routed to the ~~second one of the plurality of ports~~
identified one of the remote interface ports.

15.   (Previously Presented) The method of claim 14 comprising:
reading a destination address from the second data
frame;
using the destination address to look up a third
entry in the shared forwarding database, the third entry
indexed by the destination address and the third entry
indicating that data addressed to the destination address
should be routed to a third one of the plurality of
ports; and
routing the second data frame to the third one of
the plurality of ports.

16.   (Currently Amended) The method of claim 8 comprising:
receiving, at the ~~bridge device~~ identified one of
the remote interface ports, a second data frame from a
second network element having a second address at a
second one of the plurality of ports; and
dynamically updating the shared forwarding database
in response to receiving the second data frame, wherein

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dynamically updating the shared forwarding database
comprises:

using the second address to look up a second
entry in the shared forwarding database, the second
entry indexed by the second address;

if the second entry is present in the shared
forwarding database, ensuring that the second entry
indicates that data addressed to the second address
should be routed to the ~~second one of the plurality
of ports~~ identified one of the remote interface
ports; and

if the second entry is not present in the
shared forwarding database, creating the second
entry and ensuring that the second entry indicates
that data addressed to the second address should be
routed to the ~~second one of the plurality of ports~~
identified one of the remote interface ports.

17.   (Currently Amended) The method of claim 16 comprising:

receiving, at the ~~bridge device~~ identified one of
the remote interface ports, a third data frame from the
~~address~~ non-VLAN-aware network element;

using the address of the non-VLAN-aware network
element to look up the entry in the shared forwarding
database

determining that the shared forwarding database
should not be dynamically updated in response to
receiving the third data frame based on the entry in the
shared forwarding database ~~indicating that data addressed
to the address should be source routed~~.

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18.   (Previously Presented) The method of claim 16 comprising:
      reading a destination address from the second data
frame;
      using the destination address to look up a third
entry in the shared forwarding database, the third entry
indexed by the destination address and the third entry
indicating that data addressed to the destination address
should be routed to a third one of the plurality of
ports; and
      routing the second data frame to the third one of
the plurality of ports.

19.   (New) A method according to claim 1 comprising stripping
the source routing data from the data frame prior to
sending the data frame to the identified one of the
remote interface ports.

20.   (New) A bridge according to claim 13 wherein the bridge
is configured to strip the source routing information
from the data frame prior to forwarding the data frame to
the identified one of the remote interface ports.